

# W5YI

## National Volunteer Examiner Coordinator REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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## More on Handicapped Telegraphy Testing

In our last issue we discussed new FCC mandated methods of testing disabled persons for the 5 wpm code requirement with waivers being available for the 13 and 20 wpm speeds. The new handicapped telegraphy testing rules are an absolutely shocking reversal of previously stated Commission policy. We thought you would be interested in a little history of disabled ham testing. It all started back in 1978.

In response to two petitions (RM-2567 and RM-3138), the FCC initiated a rule making (Docket #78-250) which looked toward reducing or eliminating the telegraphy requirements for handicapped persons seeking licenses in the Amateur Service.

Amateurs were flabbergasted, however, when the Commission surprisingly added "If it creates a class of amateur radio operator license with no telegraphy requirement, the class will be available to any applicant ...not limited to those with certain disabilities."

Hams interpreted that statement to mean that the Commission would be using the disabled as their justification for the long rumored and awaited no-code "Communicator" license; first discussed in 1974 as part of Docket #20282. The ARRL objected profusely to allowing the shortcomings of the handicapped to be used as the grounds for a no-code ham ticket for everyone. Even disabled persons protested ...especially those who had already struggled to pass the telegraphy requirements.

On March 11, 1982 the FCC was persuaded to think better of their approach to no-code and killed their

proposal. They did it on the basis that FCC examiners couldn't determine who was indeed incapacitated. "The rule change contemplated ...is unnecessary and selecting a particular group of applicants for favored treatment in terms of less stringent amateur operator requirements would not be sound licensing policy. Such a policy," it said, "could lead to the necessity for FCC personnel to determine whether applicants were qualified for exemption, something they are not trained to do."

"Basic FCC policy provides that no qualified person should be denied an amateur license solely because of a handicap," the Commission ruled. "FCC testing policy which permits handicapped applicants to demonstrate their qualifications in ways that accommodate their disabilities, is more effectively applied flexibly and case-by-case than by rule," it said. "A blind applicant may use a Braille printer, and a deaf applicant may use a vibrating surface or a flashing light for the telegraphy examination. FCC field examiners provide for examinations in the homes of persons who are not able to travel. The same qualification standards are applied to all," the Commission noted in 1982.

"Many handicapped applicants have contended the telegraphy exams discriminate against them and have asked for waivers. The FCC denies waivers because the United States is bound by an International Telecommunication Union regulation to require code proficiency of all amateur radio operators except those operating exclusively at frequencies above 144 MHz. Upon ratification of the 1979 ITU

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World Administrative Radio Conference agreements, the limit will become 30 MHz." The WARC accord was, of course, ratified some time later.

In 1983 the FCC began turning ham testing over to the amateur service itself and their handicapped testing rules remained in place. Even the new 1989 update of §Part 97 Amateur Service Rules continued the policy that administering VEs accommodate an examinee whose physical disabilities require a special examination procedure. (§97.509(h)) No waivers of the code requirements were permitted.

The decision to abruptly amend this long standing policy was a political rather than a regulatory decision. The FCC's *Personal Radio Branch* was extremely surprised that the new procedures were wished on them by the administration. They had no alternative but to adopt them.

## Interview with Handi-Hams

The *Courage Handi-Hams System* is a Minnesota-based nationwide organization specializing in helping persons with disabilities enter the ham radio hobby. The learning/testing function is major part of the rehabilitation. **Bruce Humphrys, KOHR** is their Director of Rehabilitation Technology.

**W5YI:** "What was your general feeling on the new FCC policy regarding amateur radio testing of the handicapped?"

**KOHR:** "I have some grave reservations about how the FCC policy came about. I can understand the Capitol Hill politics, particularly in light of the overwhelming vote in favor of the ADA (*Americans with Disabilities*) Act. It just passed both Houses two weeks ago. It is a sweeping piece of legislation which already has Executive approval. The Act has been in the making for a number of years and mandates public accommodations for persons with disabilities. It will require within three years that even small businesses make appropriate accommodations to employed people with disabilities."

**W5YI:** "How is Amateur Radio affected by the Act?"

**KOHR:** "Amateur radio may not be, but certainly the awareness of disabled people around the country has been heightened by the emergence of this act. There has been a great deal of lobbying and pressure on Capitol Hill in favor of the act and an unexpectedly overwhelming 'yes' vote. It looks as

though the Congressional awareness of the rights of disabled folks in the United States has been intensified dramatically. This act is the backdrop for the new handicapped amateur radio policies. The time is right for something like this to attract a lot of attention.

**W5YI:** "The FCC will ultimately go through a rule making proceeding, but the interim telegraphy testing rule accommodations and waivers for the handicapped are in effect now. What are your thoughts on the FCC's new telegraphy handicapped testing policy?"

**KOHR:** "It would not be very constructive of me to comment on how this all came about. It has come about and what we are supposed to be doing now is helping implement what is probably an unpopular decision on somebody's part."

"My major difficulty with this whole decision rests in using the 1988 *Developmental Disabilities Act* as the definition of disabled. The definitions in the 1988 DD Act addresses the employability of somebody. None of the definitions address a functional disability. A person can be blind as a bat but perfectly capable of copying code at 50 words per minute."

"A person can be mentally capable, have a high cognizance of functioning and be dead as a doornail from the nose down and still be able to copy, transcribe and use Morse code in a fully functional way. There are a number of legitimate narrowly-defined legitimate neuromuscular disabilities which have a functional limitation causing certain individuals (to have) a slowness of processing. This could some inability to copy code at a higher rate of speed. It is almost a travesty of the intent of the law to include in blanket fashion literally everybody who has a chronic disability."

**W5YI:** "You believe the sightless don't qualify for a waiver? What about learning disabilities?"

**KOHR:** "Blind people should not qualify for a waiver. This is why I have grave reservations about the inclusion of the 1988 DD Act as the definition of disability. That is so inappropriate as to be ridiculous. A learning disability is a very difficult syndrome to define ...and a huge category of cognitive disabilities. I am going to have a great deal of difficulty in advising any examiner to give a waiver for a person with a certificate of learning disability. I have a learning disability. I am getting old. Until the

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Commission gives you a directive about intent, you probably have no recourse other than to admit anyone who presents a waiver letter to you.

**W5YI:** "Don't these new rules invite misuse?"

**K0HR:** "Neither the Courage Handi-Hams System nor the VECs can set up a screening committee. It is very clear that the Federal Communications Commission retains the right and the obligation to issue the waiver. What we would like to do is to advise the Commission about the difference between a medical disability and a functional disability. The FCC will then with some medical rehabilitation advice on our part be able to make some judgements about which functional disabilities constitute a legitimate cause for a waiver."

**W5YI:** "How should a code test be administered to a handicapped applicant?"

**K0HR:** "We are going to be working with appropriate personnel at the Commission. In the short term I can try to tell you how to administer a code test. I strongly believe that a general waiver or even an accommodation as to style of administering a code test be made in graduated steps downward. I would start with the standard 5, 13 or 20 words per minute code test. We give each of our applicants at our Radio Camp an opportunity to pass the standard code test. In fact we give them a couple of opportunities. They can write down the code, they can type it, they can braille it ...they can announce it to a helper."

"If the judgement of the observers, not necessarily the examiners, who are watching the testing procedure is that the applicant has a cognitive deficit that really prohibits passing the standard test then you administer a test which has plain text sentences sent at the prescribed speed. The applicant would then respond verbatim or to the content."

"Then we would go on to the next sentence. What we do is conduct a QSO, but we break it up into segments. 'Hi Bob, my name is Joe.' Then we stop the tape. Then we ask who is the sending operator and who is the receiving operator. It is not a 30 second test, it is a 5 or 10 minute test. We counsel applicants to be alert to certain key elements such as 'My QTH is...' We concentrate on techniques of note taking, relaxing while the code is being sent and concentrating on not having to copy everything. If there is still difficulty with that, then we do go down into individual words. A code test can

take 15 or 20 minutes for one individual.

**W5YI:** "The volunteer examiners frequently can not devote that much time to one individual."

**K0HR:** "What the Commission is not considering is the time these accommodations are going to be required to take and how an examination session is going to accommodate that. That is a big problem. Handi-Hams does not really go below the sentence content. Anything below that in my opinion ...and the opinion of the instructors and examiners we talk to, does not constitute a valid 5 word-per-minute test of a person's ability. I am going to have a lot of difficulty with the character recognition of their directive."

**W5YI:** "How important does Handi-Hams think the code is to ham radio?"

**K0HR:** "I can tell you what our staff believes. I can tell you what the vast majority of our members have expressed. That is that the code as a skill which is pointed to with pride and is very important. Sure, as a technology it is not important at all ...and in fact, as a communications technique for the greater amateur radio service it is probably not very important."

"But a major factor is that well over 80% of our Handi-Hams people who have gotten their license point to their having been able to pass the same test as you and I as being extremely important to their ego and self-esteem. It is difficult to underscore that too dramatically. It is a very big issue. To be sure there are a number of people who get really up tight because they can't pass the code at a certain speed. Yet in training some 7,000 people to get on the air, we have a higher percentage of our Handi-Hams disabled members holding the upper class licenses than the general amateur population."

**W5YI:** "How will your members react to the FCC's new telegraphy testing and waiver policy?"

**K0HR:** "They are going to feel terrible, absolutely terrible. How would you feel if you were allowed to drive without having to take a road test? Remember we are not talking about code as a communications technology. I am talking about it as a testing skill. I would much rather see a waiver being sought only after an applicant has failed a standard code test two or three times. I would have appreciated the Commission asking for our input first before they adopted their policy."

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## FCC RECEIVING INQUIRIES FROM PUBLIC

The FCC has been receiving a lot of inquiries on handicapped telegraphy testing and waivers. Several people have asked the FCC for a copy of the new policy or a news release but there is none available. The FCC is in the process of issuing a *Notice of Proposed Rule Making* (NPRM) which will not be available for some time.

Recommendations for handicapped testing procedures are also being considered by a committee of VECs right now. This group consists of **Ray Adams/N4BAQ** (Western Carolina ARS-VEC), **R. C. Smith/W6RZA** (Greater Los Angeles ARG-VEC), **Tom Ingram/K4OOV** (Central Alabama-VEC) and myself (**Fred Maia/W5YI-VEC**). Our recommendations will be provided to the FCC shortly.

In the interim, the sample letters with suggested wording requesting a telegraphy waiver and doctor's certification of a severe disability (published in our last newsletter) are being used to facilitate any granting of waivers by the Commission. The format and wording of these letters were provided to the VECs by the FCC as a suggestion for use until a more formal rule making could be developed and adopted.

There is no official waiver form available, no final FCC policy has been made ...and please do not call the Commission requesting printed handicapped telegraphy testing regulations. The final procedures will be released once the FCC completes the rule making. No FCC information or documents will be available on the matter until then. The W5YI-VEC has already processed two waiver requests by disabled individuals. It is the FCC - and not the VE or VEC - who grant any waiver of the 13 and/or 20 WPM telegraphy requirement.

## VE ASSISTS DISABLED OBTAIN WAIVERS

In our last issue we told how handicapped amateur **Tom McMillen/WB3HGW** asked Jordan's King Hussein/JY1 to intervene on his behalf because he was unable to pass the 13 word per minute code speed. We have also learned that **Donald L. Walker, WA3IMX** of Johnstown, PA, played a major part in obtaining telegraphy waivers for the handicapped. We spoke to him this past week.

Walker is an Extra-Class level ARRL volunteer ex-

aminer who strongly felt that McMillen should receive a waiver of the 13 wpm code test. He initially contacted the League who referred him to HandiHams. They sent him information on how to pass the code. "The fact is that Tom can't pass the code." Don then contacted the FCC's Gettysburg licensing facility and was referred to Washington. Walker eventually wrote the following letter to the Commission's Private Radio Bureau:

"I am writing this memo and request on behalf a of local handicapped amateur operator who presently holds a Technician class license, Thomas McMillen, whose call is WB3HGW. The purpose of this letter is to request a waiver of the 13 words-per-minute requirement. The attached letter from Tom's doctor states the reasons why the waiver is required. In short, Tom can not think quickly enough to comprehend the 13 wpm requirement. I have talked with HandiHams group, the ARRL and the FCC people in Washington and Gettysburg. None have been able to give any hope for helping Tom to gain additional privileges on the ham bands. According to persons employed by the FCC, there are no special privileges granted for a handicapped person. It would appear to me there must be something that can be done for a person who is truly handicapped and medically speaking can not comprehend the code speed required for additional privileges. I hold an Extra Class license and am a member of the ARRL and a volunteer examiner and I hold 20% ownership on a local repeater on two meters. You could say that as far as ham radio is concerned that I have it all. I also feel that I have it all. It is a wonderful hobby that also serves the public. Tom contributes to that service in his role as chief control operator. He does an outstanding job and is a real asset to the amateur community. Please do not view this request as another one for those who are not willing to work for the license. In addition I do not support a no-code license, however I do feel there must be a means for those who face life such as Tom does. I assure you he works harder in life for what he gets and what he does than I do and most others. Therefore, please grant this request for a waiver of the 13 word-per-minute requirement for Tom. If a waiver can not be granted would you please advise me how he can take advantage of those privileges such as a General class could. For example, if there is a way I could assume responsibility without being present I would certainly do so in order to help Tom. I appreciate your time in dealing with this matter and look forward for your response. Thank you."

WOULD YOU LIKE TO BECOME A VOLUNTEER EXAMINER?

"I am a currently licensed Extra Class amateur radio operator and wish to be a volunteer examiner. I have never had my station or operator license revoked or suspended." SAC

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Don said when he was told that nothing could be done, he appealed to the office of the FCC Chairman. "They were very nice to me and said they would do everything possible. This was some time ago and happened over a month's period. They way I see it, it's real simple. For those few who can't hop out of bed and grab their clothes jump in the car and go ...and go on picnics and go to movies ...or do everything like you and I ...and are confined to a wheelchair or to the bed or whatever - if my letter or the stand that I took to have the code waived help them to enjoy life by getting on the air - I really don't care who is opposed to it."

## *Bush Administration Wants Bucks for Bands SEARCHING FOR SPECTRUM*

You may have read or heard elsewhere in amateur circles that the government has decided not to use financial methods to give out radio spectrum. In fact, the possibility that spectrum users will have to pay to get frequencies is still alive. The top Bush administration telecommunications official advocated the idea of money for megahertz in a recent Washington speech.

Janice Obuchowski is the Assistant Secretary of Commerce for Communications and Information. She heads the National Telecommunications and Information Administration (NTIA) and is the President's principal consultant on spectrum matters. Addressing a mobile radio industry group, she criticized legislation in the House of Representatives that proposes to reallocate as much as 200 MHz of federal spectrum to the private sector. The released frequencies would be used for such high-tech applications as high-definition television (HDTV) and new kinds of cordless telephones.

She conceded that in general, and with a few exceptions, the federal government's use of its mobile radio frequencies is "less spectrum-efficient" than the private sector's use of its mobile radio spectrum.

"Monitoring of spectrum use rarely provides a complete answer" to determine efficiency, she said. "Some frequencies are only needed when war breaks out or a drug raid is on or an off-course airplane is in trouble. Weighing the competing merits of these myriad applications is at times frankly beyond the capabilities of any coordinating agency. ..."

Obuchowski said, however, that if federal agencies were authorized to sell their channels to the private

sector "...many of them would jump at the opportunity."

"With funds derived from the sale of spectrum needed by the private sector, federal agencies could afford to relocate to other bands, buy more spectrum-efficient equipment or, for many fixed operations, satisfy their communications with optical fiber. As rational as that process sounds, it is prohibited by existing law. Congress is reluctant to allow spectrum sales by the federal government. The reports I get are that private sector interests also oppose spectrum sales. The message we get is: Forget about incentives. Just take the spectrum away and give it to the private sector.

"Let me be very direct," she said. "Asking a federal agency to relinquish spectrum in a time of severe budget crunch with no compensation for equipment taken out of service, and no funding for alternative telecommunications services, is going to be a losing proposition. Tell that same agency that you are taking their spectrum away in order to give it free to entrepreneurs who can make millions by quickly reselling their rights to others, and you are likely to encounter the kind of look that Dirty Harry gives down the barrel of a .457 Magnum. Angry federal agencies will not cooperate in helping NTIA identify underused spectrum...."

"Free spectrum can only come at the expense of taxpayer dollars to replace the services lost or to relocate them to other places in the spectrum. That's just not fair." Obuchowski told the audience to "...forget about free lunches" and urge Congress to allow government agencies to sell their spectrum directly to private business interests.

■ The 1990 World Radiosport Team Championship gets underway July 20 as competitive amateur radio operator teams from around the world descend on Seattle. Hungary, Yugoslavia, France, Brazil, Czechoslovakia, Italy, England, Spain, Bulgaria, Canada, Japan, Finland, Germany and the Soviet Union will all be sending teams. WRTC is part of the Exchange Program of the 1990 Goodwill Games. Stations will be signing with a special designator /WG (World Games). They will not be identifying in regards to their nationality and they will all be using the same power and similar antennas. The WRTC is sponsored by ICOM, Ham Radio Outlet, U.S. Tower and MFJ. All CQ/WW rules apply. Exchange is RST and serial number starting with 001. Gold, Silver and Bronze medals will be awarded.

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## AMATEUR RADIO CALL SIGNS

...issued as of the first of July 1990:

<u>Radio District</u>	Gp. "A" <u>Extra</u>	Gp. "B" <u>Advan.</u>	Gp. "C" <u>Tech/Gen</u>	Gp. "D" <u>Novice</u>
0 (*)	AA0BK	KF0LO	N0MDW	KB0HGE
1	WI1C	KC1VW	N1HUP	KA1WDM
2	WZ2R	KE2US	N2KXR	KB2KSD
3	WB3E	KD3SX	N3IHJ	KA3WQL
4 (*)	AB4WY	KN4LF	N4ZPI	KC4RUG
5 (*)	AA5SZ	KI5GY	N5QYQ	KB5NGK
6 (*)	AA6WS	KK6MJ	N6ZNT	KC6MHR
7 (*)	AA7FD	KG7GE	N7PCG	KB7LGV
8 (*)	AA8BQ	KF8HW	N8MOZ	KB8KKR
9	WT9N	KE9XQ	N9JWP	KB9FFM
<b>N. Mariana Is.</b>	AH0H	AH0AG	KH0AM	WH0AAL
<b>Guam</b>	KH2N	AH2CG	KH2EM	WH2AMN
<b>Johnston Is.</b>	AH3C	AH3AD	KH3AC	WH3AAG
<b>Midway Island</b>		AH4AA	KH4AD	WH4AAH
<b>Hawaii</b>	(**)	AH6KN	NH6XA	WH6CII
<b>Kure Island</b>			KH7AA	
<b>Amer. Samoa</b>	AH8D	AH8AD	KH8AI	WH8AAZ
<b>Wake Wilkes Peale</b>	AH9A	AH9AD	KH9AE	WH9AAH
<b>Alaska</b>	(**)	AL7MC	NL7UK	WL7BZC
<b>Virgin Islands</b>	NP2F	KP2BU	NP2DX	WP2AHD
<b>Puerto Rico</b>	(**)	KP4QU	WP4YD	WP4JCQ

**CALL SIGN WATCH:** \* = All 2-by-1 format call signs have been assigned in the 4th, 5th, 6th, 7th, 8th and "0" radio districts where 2-by-2 format call signs from the AA-AK prefix block are now being assigned to Extra Class amateurs.

\*\* = All Group "A" (2-by-1) format call signs have been assigned in Hawaii, Alaska and Puerto Rico.

Group "B" (2-by-2) format call signs are assigned to Extra Class amateurs when Group "A" are depleted.

Group "C" call signs will first run out in the 4th and 6th call districts where there are only about enough for two months! [277 "N" call signs are available in the 4th call area; 318 in the 6th district.] The Technician/General class will then be issued Group "D" (2X3 format) call signs.

[Source: FCC, Gettysburg, Pennsylvania]

● It is getting more difficult for applicants to know which license preparation material to purchase when studying to upgrade your ticket! The VEC's Question Pool Committee has issued a press release requesting that publishers of Amateur Radio study guides refrain from printing an expiration date on their manuals. This is because the regulatory environment has been so volatile that not one single Question Pool has been allowed to expire on its originally scheduled date. "We therefore believe less confusion will result if no expiration date is associated with any Question Pool. The Question Pool with the latest effective date would, of course, be the current pool for that particular element." The W5YI Office distributes all popular license preparation guides. For the most current version call (toll-free) 1-800-461-6443 (VISA/MasterCard.) Shipped same day!

## MAY AMATEUR LICENSING STATS

<u>May</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
New				
Amateurs	6567	3002	3302	4284
<u>Upgrading:</u>				
Novices	2563	1885	2068	2249
Technicians	730	573	661	791
Generals	789	492	481	595
Advanced	485	376	356	322
<b>Total:</b>	<b>4567</b>	<b>3326</b>	<b>3566</b>	<b>3957</b>
<u>Renewals:</u>				
Total Renew:	3145	4088	311*	*138
Novices	310	335	36*	* 28
<u>Purged:(*)</u>				
Total Drop:	1263	2021	1854*	* 0
Novices	890	1055	902*	* 0
<u>Census:</u>				
<b>Indiv. Oper.</b>	<b>428867</b>	<b>436912</b>	<b>456871</b>	<b>453928</b>
Change/Year	+11700	+8045	+19959	-2943
<u>Indiv. Operators by Class:</u>				
<u>Extra</u>	<u>Advan.</u>	<u>General</u>	<u>Tech.</u>	<u>Novice</u>
<u>May 1987:</u>				
42136	97880	115045	87631	86175
9.8%	22.8%	26.8%	20.5%	20.1%
100%				
<u>May 1988:</u>				
45208	98493	113648	96888	827675
10.3%	22.6%	26.0%	22.2%	18.9%
100%				
<u>May 1989:</u>				
48471	100572	115404	108158	84266
10.6%	22.0%	25.3%	23.7%	18.4%
100.0%				
<u>May 1990:</u>				
48840	99047	113650	111325	81066
10.8%	21.8%	25.0%	24.5%	17.9%
100.0%				
Club/				
RACES &		(1987)	(1988)	(1989)
Military		2449	2366	2474
<b>Total Active</b>	<b>431316</b>	<b>439278</b>	<b>459345</b>	<b>456375</b>
% Increase	- 2.7%	+1.9%	* +4.6%	* - .6%

\*Adjusted Growth is actually a decrease!\*

(\*) **NOTE:** The number of amateurs in 1989 and 1990 is not comparable with prior years. Due to the implementation of the 10-year term license in 1984, amateurs who would ordinarily be dropping out of the Amateur Service between 1989 and 1993 by not renewing will be carried on the amateur rolls for another five years before being purged from the FCC's data base. This has the effect of greatly overstating the amateur census for 1989 and 1990 since the records of silent keys and those not renewing will not be deleted for another five years. The alarming trend of negative growth in the number of U.S. ham operators continues.

[Source: FCC, Gettysburg, PA]

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## TECHNOLOGY HEADLINES

■ Cable companies are bent out of shape over the Bush administration's endorsement of telephone companies getting into the cable TV business! The 1984 *Cable Act* prohibits telephone companies from entering the cable business. The powerful telephone lobby has retained a former chief of staff to George Bush during the Reagan administration to represent them.

■ Senator Conrad Burns (R-MT) introduced a bill last week that would permit telephone companies to enter the cable business. Burns said the bill's purpose is to create more competition for cable and to expedite establishment of a national fiber optics network. As expected, the *U.S. Telephone Association* supported Burn's measure; the NCTA (*National Cable Television Association*) didn't.

■ The position and legislation may all be moot. The House telecommunications subcommittee in a voice vote on June 27 voted not to lift the restraints that prevent phone company entry into cable. The new House legislation also provides for mandatory carriage of local broadcast television stations by cable companies and a requirement that cable operators sell their programming to competitors - including direct broadcast satellite (DBS) television, so-called wireless cable ...and home satellite dish.

■ The bill permits the FCC to establish procedures to reduce unreasonable and abusive basic cable programming costs by establishing the maximum basic television charge under the *Cable Television Consumer and Protection Act of 1990*. Premium services would be regulated on a case-by-case basis. The Bush administration is opposed to rate regulation.

■ The federal government's *General Accounting Office* reports that the average rate for the lowest-cost basic cable services in 1989 climbed an average of 10%. The GAO released a study showing that the average basic cable TV rates

have escalated 39% since rate deregulation went into effect in 1986. From Nov. 1986 to Dec. 1989, the average basic service increased from \$11.71 to \$16.33. The GAO is Congress' investigative arm. For the 12 months ending May 31, cable prices rose more than double the 4.8% rate of inflation. The GAO also found that since 1985, 53% of the nation's cable systems changed hands.

■ On July 26, the FCC is scheduled to issue an exhaustive study on the cable industry and decide whether to adopt new cable pricing regulations. The Commission has previously said it prefers the effective competition route for cable rather than re-regulating the industry.

■ Cable video shopping doesn't show any sign of winding down! At least not for the Home Shopping Network. HSN set a new sales record for their first nine (fiscal) months - and a 38% increase in its third fiscal quarter - \$265.5 million vs. \$178.7 million! Year-to-date sales are \$763.7 million - up 30.1%. Income soared 232%! Effective June 20, HSN is listed on the NY Stock Exchange.

■ The FCC newest commissioner, Andrew Barrett, has been approved and sworn in for a full five-year term that expires June 30, 1995.

■ New cable leakage rules went into effect on July 1st! If the FCC's standards are not met by a cable company, the system must stop using the frequency until it passes a new signal leakage test. The Commission said it will not grant any waivers of the new leakage regulations.

■ The FCC is seeking input on giving special licensing preferences to new spectrum modes and innovation. The proposed "pioneers preference" would provide such advantages as a six month earlier licensing window thereby ensuring the innovator an opportunity to participate in a service it first sought to develop..." The Commission is especially interested in new and unique approaches to spectrum usage.

■ 1990 could go down as the year of the handicapped. A bill (S.1974) has been introduced by Senator Tom Harkin (D-Iowa) that would require all television sets with 13 inch or larger screens to have built-in closed captioned decoders for the hearing impaired. Television manufacturers are opposed to the bill citing that 95% of the decoder chips will never be used -- yet the American TV buyer will have to pay an increased cost of \$500 million annually for the mandatory decoders.

■ Timex, whose claim to fame is wrist watches, plans to get into the CT2 (*Cordless Telephone Second Generation*) business. They have asked the FCC for permission to test the technology above 900 MHz. The one-way CT2 allows consumers with a wallet-size folding cordless handset to tie into telephone lines (called telepoints) scattered around shopping centers, bus stations, and other public base station areas.

■ Timex also has a joint venture going with Motorola to provide wristwatch pagers. In Portland, Ore., AT&T Corp. has introduced their own Dick Tracy-style Seiko wristwatch pager which displays phone numbers and pre-coded messages. It will eventually be available in 52 domestic markets, receiving its data through the subcarriers of 180 FM broadcast stations. The \$225 (plus \$12.50 a month for the paging service) *Receptor Message Watch* can store up to 8 messages (time and date stamping each one) and display time for two time zones. The watch may now be ordered in Portland via phone/mail order by calling an 800 number or returning a coupon. A total of 45 newspaper ads will run through the end of this month. A national rollout will follow. Seventeen cities will be on-line by the end of next year. The value of AT&T's shares, traded on the American Stock Exchange, have been going up like a rocket (up 44% in a couple of weeks), but almost half were sold "short" - that is the investors hope to buy the shares back later at a lower rate. Not a good sign at all! One of the biggest problems to overcome is the reliability of FM subcarriers inside office buildings; FM subcarriers

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don't penetrate concrete/steel construction well at all. The Timex/Motorola wrist watch pager now being tested in Washington, D.C. uses VHF paging frequencies rather than FM subcarriers.

■ A study by the Arthur D. Little consulting firm says that more than half of U.S. households would like to purchase a less expensive (\$10 to \$50 a month) cellular-like pocket telephone service. The largest buying group would be those under age 44 with household incomes over \$40,000.

■ The Commission recently released a Notice of Inquiry (Docket 90-314) into the establishment of advanced cordless telephone systems and personal communication networks in the U.S. The FCC asked the public to respond to a wide range of questions including: (1.) what personal communications systems are needed, (2.) where should they be located in the spectrum, (3.) how much spectrum should be allocated, (4.) how should they be regulated and (5.) what technical standards should be adopted. Comments due October 1st.

■ Testing of 900-MHz wireless personal communications networks (PCN) is slated to begin shortly in Washington, D.C. The FCC granted an experimental PCN license to American Personal Communications, Inc. The approved frequencies are just above and below the 900 MHz ham band. The Commission also has under consideration the experimental application of Mill-com, Inc. seeking authority to offer similar PCN services at 1.9 GHz ...also in Washington, D.C. PCN is somewhat similar to CT2 except that it allows incoming as well as outgoing phone calls. PCN also utilizes a network of micro-cell sites rather than fixed location telepoints.

■ Congressman John Dingell's (D-Mich.) bill (*Emerging Telecommunications Technologies Act of 1990*) to reallocate 200 MHz below 5 GHz from the government arsenal to the private sector is moving along. Wording was recently changed to allow the Bush administration more

latitude in determining which national security, public safety and government operations to protect. The bill originally was to provide spectrum for new technologies (such as CT2 and PCN) but now will allow some spectrum to be used for commercial licensing. Government spectrum is now controlled by the National Telecommunications and Information Administration. The NTIA is presently in the midst of broad study of how government spectrum is used. FCC Chairman Alfred Sikes was the previous NTIA chief - so he certainly has first hand knowledge on how government spectrum is managed.

■ The July 1990 *Technology Review* edited at the prestigious Massachusetts Institute of Technology discusses an electronic *Back Seat Driver* automobile navigation terminal developed at MIT's Media Laboratory. The device helps drivers find their way in unfamiliar surroundings. The digital talking system gives directions based on the shortest, fastest or simplest route within a 41-square mile area of Boston. For example, the device can say, "Get in the left lane because you're going to take a left at the next set of lights. It's a complicated intersection because there are two streets on the left. You want the sharper of the two. It's also the better of them."

■ **New from Japan!** (1.) A camera with a built-in printer allows up to 30 prints of a single photo. (\$330.) A built-in computer digitizes the image and prints them in a variety of finishes. (2.) Listen to music or receive telephone calls from the same equipment! A \$1,000 stereo doubles as a speaker phone. You listen to the caller on a stereo speaker which has a built-in microphone. (3.) Kuni is a \$70 battery-powered car deodorizer which turns itself on for 45 minutes four times a day. (4.) Fuji-Xerox has a new \$600 hand-held FAX. Just scan the message and press the send button. (5.) Hitachi's \$1,800 31-inch TV uses artificial intelligence to adjust the color/brightness of the screen and to enhance the effect of its surround-sound acoustics. (6.) Fujitsu General Ltd introduced a home security

system that allows you to lock the door and turn out the lights remotely from any telephone. It even includes a front-door camera allowing visitors to leave audio/video messages. (7.) Konica has a voice-actuated camera that automatically points itself toward sound and snaps a photo. (8.) Toshiba's voice actuated telephone will dial a number when you pick up the receiver and say the name of the person being called. You program the phone by saying names into the machine of people frequently called. (9.) Sharp has a self-programming microwave oven that includes a cookbook with bar-coded recipes. The oven sets the temperature, timing and even prompts the cook on a display screen to remove cover, stir, etc. (10.) Fotovix reproduces positive photographs and negative film and transmits them directly to your TV screen. (\$550.) (11.) Japan has a periodical called *Tocho no Subete* or "Everything About Eavesdropping" aimed at the marital infidelity, employer/worker spying and wire-tapping/bugging market (12.) Toto's Washlet electronic toilet seat converts a regular toilet seat into a bidet with jets shooting out warm water and air. Toto's Queen toilet can analyze urine, measure blood pressure and transmit the results electronically to your physician! (13.) Motoman is a (\$29,000) 114 pound desktop robot that can type, assemble, sort, measure and test 24 hours a day at a cost of \$4,000 a year!

■ **Food for Thought Dept.** Japan has the world's largest population of industrial robots. With half the population, Japan has five times as many robots. Ratio of people to robots in the U.S. is 6,526 to one - in Japan: 704 to 1. A Toyota welding robot costing \$71,000 can work around the clock for years replacing a \$41,000 welder who works a single shift. Toyota, Japan's largest automaker, has become Japan's top pretax earner for the third consecutive year. For the first time, Japan ranked third in per capita Gross Domestic Product (GDP) ...with Switzerland and Luxembourg ranked first and second. GDP is the total value of all goods and services produced by an economy excluding net income from abroad.

plus \$2.00 shipping charge  
Contains all (nearly 2,000) questions,

NEW!

ANOTHER NEW BOOK FROM W5YI PUBLISHING!  
The Radio Amateur's Licensing Handbook is for everyone

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■ The July issue of *Home Office Computing* has an article entitled "Computer Equipment - Delivered to your Door." On June 4, *PC Week* ran a feature "Experienced Users Say Mail Order is the Only Way to Buy." Both say the same thing - you can save money by buying mail order especially if you have some experience with computers. Although not basically a mail order company, the Dallas based **Micro Marketing Group** is operated by two extra class ham operators.

**Jeff Poll, NA5S**, (President/CEO) started the firm as an offshoot of being a value added reseller (VAR) of computers. He learned that in some central states there were no quality discount computer stores. The Micro Marketing Group now has six stores with two more on the drawing board operating under the name of the Hard Warehouse. Their Chief Financial Officer is **Jim Westfall, NT5V**. They ran half page ads in both *CQ* and *QST* last fall. (See November 1989).

Their first store was opened in Cincinnati, OH, in August 1986, followed by Indianapolis, IN in October, Louisville, KY in November, Nashville TN in June 1987, Memphis, TN in April 1988 and Omaha NE in May 1989. Starting with just 3 employees, they now have over a hundred. Sales this year will be about \$24 million!

Micro Marketing is their manufacturing arm. Hundreds of computers have been sold to hams in the Dallas area without any advertising whatsoever! Support is available at no charge over the telephone. All computers are burned in for over 24 hours before shipment.

Any reader interested in an MNG Computer (we have one ourselves) should telephone Jim or Jeff at (214) 349-4600. We asked them for a special deal for our readers and VE's. Jim offered an MNG-286-12 MHz System, 1 Meg memory, 40MB high-speed 28-ms hard drive, 1.2 Meg. HD floppy drive, serial/parallel ports, hi-res monochrome graphics monitor, 101 key enhanced keyboard and MS-DOS 3.3 or 4.01 for \$1,099 pre-paid anywhere in the U.S. (A VGA

version is \$390 more.) If you are a VE, they will even load on our examination software at no additional charge. They also have available all sorts of accessories such as modems, tape drives, mouse, which they can configure into the computer. (Address: MNG, P. O. Box 551608, Dallas, TX 75355)

■ On June 26, IBM touched off a high-stakes big-spending (\$30 million) battle for the home computer market. Their small-footprint 286 PS/1 comes equipped with a customized version of DOS 4.0 and features an icon-based user interface and windowing system built into ROM. There are four models available, 2 monochrome and 2 color. The MO1 has 512K bytes of memory and a single 3.5" floppy; the M34 a 30 MB hard drive, single floppy and 1M of memory. The CO1 and C34 are color versions of the MO1 and M34. List prices are \$995, \$1449, \$1640 and \$1999. Reportedly all have 2,400 bps internal modems for accessing *Prodigy*, the IBM/Sears joint venture into on-line information systems.

The PS/1's innovative snap-together cabinet design allows users to flip open the top of the computer to remove components such as drives that need replacement. The one year warranty can be extended for another year for \$99; \$199 for three years. The user simply calls a toll-free 800 number and an IBM technician in Atlanta isolates the problem and arranges for UPS pickup and delivery of the needed part.

The industry trade newspaper, *PC Week*, however, wasn't very impressed with the PS/1. They say, "The two monochrome models barely deserve to be taken seriously. The top of the line PS/1 (CO34) model with 1M byte of memory gets to the point where it almost has enough capacity to be useful for something." *PC Week* feels IBM will have the same result with the PS/1 as it had back in 1984 with their chiclet key PC Junior home computer. The new machine is being dubbed as "Son of PC/jr." There were some 500,000 PC/jr's sold before IBM took it off the market in 1985.

■ IBM managed, however, to upstage Apple Computer and their planned introduction of a low-end entry-level \$1,000 Macintosh. Apple is now reconsidering their marketing approach. It has been pushed back to a fall 1990 introduction. And Tandy is due to introduce a new low end PC on July 25 that will go head to head against IBM. Tandy's lower priced machine will be expandable while the IBM PS/1 is not.

■ Its anybody's guess how long Heath/Zenith will be in the kit business. They have shut down all of their Canadian Computer and Electronics Centers plus two in the U.S. They have 64 stores remaining, but one trade magazine said ten more would be closed before year end. Heath/Zenith has chosen to concentrate on computers rather than the electronic build-it-yourself Heathkits.

■ We visited the Information Age exhibit at the Smithsonian's Museum of American History while in Washington DC at the VEC Conference. We saw Samuel Morse's earliest 1835 telegraph and the paper tape bearing the first long-distance telegraph message in 1844. Alexander Graham Bell's first telephone also was on display and you could talk over the same telephone wire that Bell used. We even tapped out CQD (Come Quick Danger) and SOS in both spark and CW in a re-creation of the Titanic's radio room.

Portions of ENIAC, the largest computer built during World War II was there complete with its many mechanical relays. At the entrance, visitors pick up an interactive (bar coded) brochure that serves as their electronic guide to the exhibition. Visitors learn about information technologies by using them.

The Smithsonian's ham station, NN3SI (the only NN ham prefix ever authorized) was not in operation, but was due to be re-installed. We noted a lot of youngsters at the exhibit - most were playing with the interactive computers. Few seemed to be interested in the excellent collection of communication artifacts. Admission is free.

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## RADIO WAVE INTERFERENCE

Joycelyn Walls, the *Public Affairs Specialist* in the FCC's Baltimore, Maryland, field office has been writing a series of bulletins on radio interference aimed at the public. Among some of her tips:

### LOCATING ELECTRICAL INTERFERENCE:

Tune a battery operated portable AM radio to an AM station. Make sure you are receiving the interference. Take the radio with you to your breaker box and shut off the main switch. If the interference remains, the interference is outside of your home and you should contact the operations department of your power company. If the interference disappears, the interference is in your home and you are responsible for correcting the problem.

To determine where the problem is coming from in your home, turn the main breaker back on. Switch off the breakers one at a time that control different sections of the house while listening for the interference to switch off and on in the radio receiver. Once you have determined the area where the interference is located, go to each electric appliance in that section and unplug each, one at a time and listen for the interference to disappear from the radio. That will tell you which appliance is the culprit. Then have it repaired.

### HANDLING TELEPHONE INTERFERENCE:

Telephone interference has been increasing now that AT&T is separate from the local Bell operating companies and more customers are buying their own phone equipment. In order to cut costs and be more competitive, phone equipment companies began leaving out many seemingly unimportant devices that helped to attenuate interference from several different sources and the problem of audio rectification. Audio rectification is the detection of unwanted modulated RF signals.

Cheap phones have less than adequate filtering and shielding and can transmit interference to other telephones being used in the home. Expensive programmable phones used most often by businesses have many other functions resulting in extreme sensitivity. These added functions require extra electrical circuitry and are more difficult to filter.

Disconnect the phone that receives the interference the worst, then listen to the other extensions to see if the interference is still present. Listen for the call letters of the broadcast station you are receiving the interference from. Then contact the station to solicit any technical assistance. Also request advice and filtering methods from the telephone company.

If your residential phone has a modular hook-up, a Z100A (desk top) or Z101A (wall model) filter purchased from an AT&T phone store should help. (Also available by mail order from AT&T's Service Center in St. Louis, MO. Tel. 800-222-3111) Radio Shack also markets a (Archer #273-104) snap-on-choke filter. A .01 microfarad bypass capacitor connected across the microphone unit

in the telephone handset may eliminate unwanted signals. Toroid rings and ferrite beads are also very effective filters.

### CB RADIO INTERFERENCE:

It is necessary to determine which channels are being affected if you suspect CB radio operators are the cause of your TVI. The problem is typically CB harmonics if only TV channels 2 and/or 5 are affected and all other VHF channels are undisturbed. The problem is usually an overloaded tuner in the television if the interference appears on all VHF channels. CB interference can also cause cordless telephones to ring.

Install a high pass filter on TVs when CB interference is suspected. High pass filters reduce the fundamental signal strength to a level that the television can handle. Keep all cables and wires on electronic devices as short as possible. Use shielded grounded coaxial cable wherever possible and install .001 microfarad capacitors across speaker terminals to stop interference coming through stereo speakers.

### COMMERCIAL RADIO INTERFERENCE:

Blanketing interference is the ability of an unwanted commercial broadcast station to override the audio of radio, television or telephone service. Contact the station to lodge a complaint and solicit assistance. The broadcaster will usually be aware of the areas where he must provide interference solutions and can provide filters free or at cost to take care of difficulties specific to his frequency.

### CABLE INTERFERENCE:

Because the cable system is fed to the subscriber through a shielded and grounded cable system from another location, subscribers to the cable service should not get interference from any local source. However, electrical interference, superimposed programing and amateur/CB caused voice and herringbone patterns can occur.

The most likely reasons for the interference is a break in the shielding of the cable allowing stray signals to enter the cable system or the circuitry in the affected device picks up the signal by means other than the antenna.

Check all cable connections for tightness. Contact the cable company for assistance. If they do not respond, contact your local FCC office and the FCC will notify the cable company of the leakage and request action to resolve the problem.

### COMPUTER INTERFERENCE:

While minimal, it does exist. The timing mechanism in a computer is an oscillator which emits some RF signals. The FCC puts levels on these RF emissions. The interference can take the form a a herringbone pattern through the video or static noise on a radio receiver. A label appears on given computer design that has been Commission approved for residential or business marketing.